XXVIII.—*A Review of the Species of the Genus* Himantopus.

By Henry Seebohm.

The genus *Himantopus* contains ten species, and embraces the Stilts, the Avocets, and the Peruvian Stilt and the Banded Avocet, which form the connecting links between them.

This genus of birds is remarkably homogeneous and well differentiated from all allied genera, and contains species so closely related to each other, that there can be no possible reason for subdividing it in the way which has been adopted by most ornithologists.

The synonymy of the genus Himantopus is as follows :—

	Type.
Himantopus, Brisson, Orn. v. p. 34 (1760)	*H. melanopterus.*
Avocetta, Brisson, Orn. vi. p. 538 (1760)	*H. avocetta.*
Recurvirostra, Linnæus, Syst. Nat. i. p. 256 (1766)	*H. avocetta.*
Macrotarsus, Lacépède, Mém. de l'Inst. iii. p. 518 (1801)	*H. melanopterus.*
Hypsibates, Nitzsch, Ersch u. Grub. Encycl. xvi. p. 150 (1827)	*H. melanopterus.*
Leptorhynchus, Dubus, Mag. Zool. v. pl. 45 (1835)	*H. pectoralis.*
Cladorhynchus, Gray, List Gen. B. p. 69 (1840)	*H. pectoralis.*

It is difficult to say to which genera *Himantopus* is nearest related. The softness of the plumage resembles that of *Phalaropus,* but this is probably an evidence of analogy rather than of affinity. The delicate reticulation of the tarsus is similar to that of the bar-tailed species of *Charadrius,* to which, in spite of the dissimilarity of the bill, the genus may possibly be more nearly allied. The ten species included in *Himantopus* may be diagnosed from all the other species of the family Charadriidæ by the combination of three characters. Each of these is found in many other species of the family, but no species belonging to it combines all three, except the ten species which constitute the genus *Himantopus*. These three characters are a long bill and a long and reticulated tarsus. The genus may therefore be diagnosed as follows :—

Charadriidæ having the tarsus covered all over with a network of fine hexagonal reticulations, having more than three fourths of the bill (measured from the frontal feathers) beyond the nasal orifice, and having the tarsus at least twice the length of the middle toe.

The species may be diagnosed as follows :—

Innermost secondaries white	Toes deeply webbed	*avocetta*	White on scapulars.	
		rubricollis		
		americanus		Outer webs of secondaries chiefly dark.
		pectoralis.		
		andinus	No white on wings.	
		mexicanus		
	In pied plumage; black on hind neck not reaching to the crown	*brasiliensis*		
		leucocephalus		In pied plumage; black on hind neck not extending under the eye.
Breeding-plumage entirely dark		*novæ-zelandiæ*		
		melanopterus		

The range of the genus is almost cosmopolitan, but it does not extend into the Arctic Region nor to the smaller islands of the Pacific. Four species breed in the Australian Region, two in the Nearctic and two in the Neotropical Regions. The remaining two species breed in the Palæarctic Region, but one breeds also in the Oriental Region, and the other in the Ethiopian Region. This information has little interest because it has little significance, except perhaps that Australia appears to have been the centre of distribution of the genus, an inference probably false. If the genus be split into three, bad is made worse, and the key to the geographical distribution is broken. I propose to approach the subject from quite a different point of view.

A careful study of the geographical distribution of the couple of hundred species and subspecies of birds which compose the family Charadriidæ leads to the conclusion that they are the variously modified descendants of a species of wader which lived on the shores of the north polar basin some time before the close of the Glacial epoch. During one of the later Glacial periods this circumpolar species was driven south, and split up into parties, which were isolated in various parts of the tropical and subtropical regions, and became, during the period of their isolation, differentiated into species. These species were the ancestors of the present genera of Charadriidæ, and during the interglacial period which followed their differentiation (probably the last of the half dozen or so which occurred) most of them followed the retreating cold and became (with few exceptions) once more circumpolar; but instead of being, as they formerly were, of one species, they then consisted of a dozen or more well-defined species, from one of which no doubt the genus *Himantopus* descended. During the last Glacial period the dozen or more species were again dispersed, each of them was split up into parties, which becoming isolated from each other were differentiated into the now existing species.

Let us endeavour to trace the history of the ancestral species from which the ten species now forming the genus *Himantopus* are descended, and let us try to follow its emigration, from the period when it consisted of only one species living on the shores of the north polar sea, down to the present time when its descendants have become ten species scattered over the greater part of the globe.

Probably the first split in the circle of circumpolar birds was the intervention of a glacier, stretching from the north pole down the mountains of Greenland. The semi-isolation caused by the stoppage of any interbreeding between the birds of the Atlantic coast of America and that of Europe must naturally have produced a differentiation between the birds of Grinnell Land and Scandinavia, and there is reason to believe that the former became Stilts and the latter Avocets; but inasmuch as interbreeding could take place between the birds of each bay and those of the next, along the whole line in one direction, it can scarcely be doubted that at first the Stilts were connected by a series of intermediate forms with the Avocets. The next cause of isolation (which was probably complete) was most likely a glacier stretching across the north pole from the Rocky Mountains, either to Novaya Zemlya or to the mountains of Eastern Siberia. This must soon have been followed by the evacuation of the Polar basin, and the emigration of the birds in four parties along the four shores leading to the south. The causes already explained must have produced an emigration of Stilts along one coast of the Atlantic, an emigration of Avocets along the other, whilst the emigration along the two coasts of the Pacific must have consisted on the one side of Avocets with a strong strain of Stilt in them, and on the other of Stilts with a strong strain of Avocet blood.

The next step to take is to examine the ten species of the genus, and ascertain if all four parties of emigrants have left descendants, and to determine by what characters they may now be detected. The four groups of which we are in search are Stilts, Semi-stilts, Avocets, and Semi-avocets. The three first species on the list, *H. avocetta, H. rubricollis,* and *H. americanus,* are unquestionably thorough-bred Avocets, diagnosed as *mantle white, scapulars and secondaries for the most part white.* The five last species on the list, *H. mexicanus, H. brasiliensis, H. leucocephalus, H. novæ-zelandiæ,* and *H. melanopterus,* are as unquestionably thorough-bred Stilts, having all the parts mentioned above black instead of white. These are the important characters which date farthest back, but it is worthy of note that in these two groups the black mantle, &c., is correlated with a straight bill, very slightly webbed feet, and the absence of a hind toe; whilst the white mantle is correlated with a recurved bill, strongly webbed feet, and the presence of a hind toe. We have now two species left, *H. andinus* and *H. pectoralis.* The former is called an Avocet, and the latter a Stilt, by the writers who place such an extravagant value on structural characters. In my opinion *H. andinus* is a model representative of a Semi-stilt. It has the black mantle and wings of the Stilts, whilst its strain of Avocet blood crops up in the less important characters of its recurved bill, webbed feet, and hind toe. *H. pectoralis,* on the other hand, is an excellent Semi-avocet, its white mantle and the white on its wings proclaiming it an Avocet, whilst its straight bill and the absence of a hind toe show its relationship to the Stilts.

The third step in the argument is the apportioning of the four groups to the four routes. The case is a very simple one. The Semi-stilt and the Semi-avocet are, by the terms of the hypothesis, the representatives of the two Pacific-coast emigrations; and as the Semi-stilt inhabits Peru, and the Semi-avocet Australia, there can be no dispute that the Semi-stilts emigrated along the American shores of the Pacific, and the Semi-avocets along the Asiatic shores of that ocean. The shores of the Pacific are so much more mountainous than those of the Atlantic, that the ice of the Glacial periods must have extended much further south on the former than it did on the shore of the Atlantic, a circumstance which may account for the fact that the Semi-stilt and the Semi-avocet both crossed the line and settled in the cooler parts of the southern hemisphere. The Avocets consequently represent the Old-World pair, the true Avocets migrating along the Atlantic coast. The Stilts being the New-World couple, we must apportion the Atlantic coast of America to the true Stilts.

Their further migrations must be considered when their mutual relationships have been discussed. The first group contains three species, which may be regarded as true Avocets.

HIMANTOPUS AVOCETTA.

Avocetta avocetta, Briss. Orn. vi. p. 538 (1760).

Recurvirostra avocetta, Linn. Syst. Nat. i. p. 256 (1766); et auctorum plurimorum.

Scolopax avocetta (Briss.), Scop. Ann. I. Hist. Nat. p. 92 (1769).

Avocetta europæa, Dumont, Dict. Sc. Nat. iii. p. 339 (1816).

Recurvirostra sinensis, Swinhoe, Ibis, 1867, p. 401.

Plates: Dresser, Birds of Europe, vii. pl. 534; Gould, Birds of Gt. Britain, iv. pl. 53.

Habits : Seebohm, British Birds, iii. p. 74.

Eggs : Seebohm, British Birds, pl. 24. figs. 2, 5.

The Common Avocet may be distinguished by the colour of its *forehead, crown, and hind neck,* which are *black in the adult* and *brown in young* in first plumage. Its white innermost secondaries when adult are also peculiar to the species.

The increase of population and the drainage of marshes have restricted the breeding-places of the Avocet in Europe to the islands off the coast of Denmark and Holland, the marshes of Southern Spain, the delta of the Rhone, and the lagoons on the shores of the Black Sea. To Southern Scandinavia and the rest of Central and Southern Europe, with the exception above mentioned, the Avocet has become, as it is in our islands, only an accidental visitor; but further east it is more abundant, breeding in Palestine and Persia, where it is a resident, and in North Turkestan, the extreme southwest of Siberia, South-east Mongolia, and South Dauria, where it is a summer visitor, wintering in China, Formosa, Hainan, India, and occasionally Ceylon. It has been recorded from the main island of Japan. In Asia Minor it is principally known on passage, though a few are said to remain during the winter; and it is said to breed throughout Africa in suitable localities.

HIMANTOPUS RUBRICOLLIS.

Recurvirostra novæ-hollandiæ, Vieillot, N. Dict. d'Hist. Nat. iii. p. 103 (1816).

Recurvirostra rubricollis, Temminck, Man. d'Orn. ii. p. 592 (1820); et auctorum plurimorum.

Avocetta novæ-hollandiæ, Ellman, Zoologist, 1861, p. 7470.

Plates: Gould, Birds of Australia, vi. pl. 27.

Habits: Buller, Birds of New Zealand, p. 201.

Eggs: Campbell, Nests and Eggs of Australian Birds, p. 55.

The Australian Avocet may be diagnosed at all ages by its combination of the following characters:—*secondaries white* on both webs, a great deal of *white on the scapulars,* but *none on the innermost secondaries.* In breeding-plumage the head and neck are chestnut.

It is found throughout Australia, except in the extreme north, and occasionally occurs in Tasmania, New Zealand, and Norfolk Island.

The Australian Avocet is an intermediate form between the Common Avocet and the North-American Avocet; it has less white on the wing than the former and more than the latter.

HIMANTOPUS AMERICANUS.

Recurvirostra americana, Gmelin, Syst. Nat. i. p. 693 (1788); et auctorum plurimorum.

Recurvirostra occidentalis, Vigors, Zool. Journ. iv. p. 356 (1829).

Plates: Wilson, Amer. Orn. pl. 63. fig. 2; Gray, Gen. Birds, iii. pl. 155.

Habits: Baird, Brewer, and Ridgway, Water-Birds N. Amer. i. p. 341.

Eggs: Thienemann, Vogeleiern, pl. lxvi. fig. 3.

The North-American Avocet may be distinguished at all ages by the colour of its *secondaries,* which are *white, with a large patch of brown on the outer web.* In breeding-plumage the head and neck are pale chestnut.

It breeds in North America, as far north as the Great Slave Lake, and as far south as Texas. To the northern portion of its range it is only a summer visitor, wintering in Central America and the West Indies.

These three species constitute the group of true Avocets. Their ancestors seem to have left the Polar basin by way of the European shores of the Atlantic, and to have occupied Africa and the southern portion of the Palæarctic Region.

Finding the Oriental Region already occupied during the breeding-season by the Stilts, they seem to have sent off a detachment to Australia during the Glacial period. Here also the ground appears to have been partially occupied by congeneric species, so that a second emigration became necessary, which found a home on the west coast of the United States.

HIMANTOPUS PECTORALIS.

Recurvirostra leucocephala, Vieillot, N. Dict. d'Hist. Nat. iii. p. 103 (1816).

Recurvirostra orientalis, Cuvier, Règ. An. i. p. 496 (1817).

Leptorhynchus pectoralis, Dubus, Mag. Zool. v. pl. 45 (1835); et auctorum plurimorum.

Himantopus palmatus, Gould, Syn. Birds Austr. ii. pl. 14 (1837).

Cladorhynchus pectoralis (Dubus), Gray, List Gen. Birds, p. 69 (1840).

Cladorhynchus orientalis (Cuv.), Selys-Longch. Bull. d'Ac. Roy. Belg. xviii. pt. i. p. 9 (1851).

Cladorhynchus leucocephalus (Vieill.), Harting, Ibis, 1874, p. 252.

Plates: Gould, Birds of Australia, vi. pl. 26.

Habits: Gould, Handb. B. Austr. ii. p. 248.

Eggs: Campbell, Nests and Eggs of Australian Birds, p. 55.

The Banded Stilt (or Banded Avocet, as it ought to be called) may be distinguished at all ages and seasons by its *white mantle* and *brown scapulars*, a combination found in no other species of the genus. A second and equally good diagnosis is *webbed feet*, but *no hind toe*. In breeding-plumage the lower breast is chestnut, shading into a brown ventral band.

It is a resident in the southern half of Australia, and has occurred in Tasmania.

The Banded Avocet is the sole representative of the Semi-avocets, which I have endeavoured to show probably emigrated from the Polar basin along the Pacific coast of Asia.

HIMANTOPUS ANDINUS.

Recurvirostra andina, Philippi & Landbeck, Wiegm. Arch. 1863, pt. i. p. 131.

Plate: Harting, Ibis, 1874, pl. ix.

Habits: Philippi and Landbeck, loc. cit.

Eggs: unknown.

The Peruvian Avocet (or Peruvian Stilt, as it should be called) is the only species of the genus having *webbed feet* and *a hind toe* which has *no white on the secondaries.*

It is only known from a plateau of the Peruvian Andes, 16,000 feet above the sea.

The Peruvian Stilt is the sole representative of the Semi-stilts, which, according to my hypothesis, emigrated from the Polar basin along the Pacific coast of America.

HIMANTOPUS MEXICANUS.

Himantopus nigricollis, Vieillot, N. Dict. d'Hist. Nat. x. p. 42 (1817).

Himantopus mexicanus, Ord, Wils. Orn. Amer. vii. p. 52 (1824); et auctorum plurimorum.

Hypsibates nigricollis (Vieill.), Cabanis, Schomb. Guian. iii. p. 758 (1848).

Macrotarsus nigricollis (Vieill.), Gundlach, Journ. Orn. 1856, p. 422.

Plates: Wilson, Am. Orn. pl. 58. fig. 2; Sclater & Salvin, Proc. Zool. Soc. 1873, p. 453 (woodcut of head).

Habits: Baird, Brewer, & Ridgway, Water-Birds N. Amer. i. p. 346.

Eggs: Thienemann, Vogeleiern, pl. lxiii. fig. 6.

The North-American Stilt is an intermediate form between the Common Stilt and the Chilian Stilt. It may be recognized by the distribution of the *black on the back of the neck,* which not only *passes underneath the eye* but also *extends over the crown* and joins the black on the mantle. Young in first plumage resemble adults, except that the black is replaced by brown.

It breeds in the southern half of North America, and winters in the northern half of South America, but in the central portion of its range it is said to be a resident.

+ HIMANTOPUS BRASILIENSIS.

Himantopus brasiliensis, Brehm, Vög. Deutschl. p. 684 (1831).

Himantopus nigricollis, auctorum multorum, nec Vieillot.

Plates : Sclater & Salvin, Proc. Zool. Soc. 1873, p. 454 (woodcut of head); Baird, Brewer, and Ridgway, Water-Birds N. Amer. i. p. 345 (coloured plate of head).

Habits :
Eggs : } Gibson, Ibis, 1880, p. 162.

The Chilian Stilt may be recognized by the distribution of the *black on the back of the neck*, which extends *underneath the eye*, but *not on the crown*, and is almost always separated from the black mantle by a white collar. Young in first plumage are supposed to differ only in being duller in colour.

It is said to breed in the Chilian subregion of South America, the more southerly birds migrating northwards in autumn to winter in South Brazil.

The Chilian Stilt appears to be most nearly related to the Australian Stilt, scarcely differing from it except in having a black band on the side of the head, and less white on the collar. It is, however, almost as nearly related to the North American Stilt, being, in fact, an intermediate form between the two.

HIMANTOPUS LEUCOCEPHALUS.

Himantopus leucocephalus, Gould, Proc. Zool. Soc. 1837, p. 26; et auctorum plurimorum.

Himantopus novæ-hollandiæ, Bonaparte, Compt. Rend. xliii. p. 421 (1856).

Himantopus albus, Ellman, Zoologist, 1861, p. 7470.

Plates : Gould, Birds of Australia, vi. pl. 24.

Habits : Gould, Handb. B. Austr. ii. p. 246.

Eggs : Buller, Birds of New Zealand, p. 204.

The Australian Stilt may be recognized when adult by the distribution of the *black on the back of the neck,* which *does not extend to any part of the head,* and is separated from the black mantle by a white collar. Young in first plumage are said to resemble the young of the Common Stilt.

The Australian Stilt breeds in Australia and New Zealand, and has occurred in Tasmania. It is probably only a winter visitor to the Malay Archipelago, where it has been recorded from New Guinea, Celebes, Borneo, Java, Sumatra, the Philippines, and some of the smaller islands.

It is most nearly related to the Black Stilt on the one hand, and on the other to the South-American Stilt.

HIMANTOPUS NOVÆ-ZELANDIÆ.

Himantopus novæ-zelandiæ, Gould, Proc. Zool. Soc. 1841, p. 8; et auctorum plurimorum.

Himantopus melas, Hombr. & Jacq. Ann. Sc. Nat. Paris, xvi. p. 320 (1841).

Himantopus niger, Ellman, Zoologist, 1861, p. 7470.

Himantopus spicatus, Potts, Trans. New Z. Inst. 1872, p. 198.

Plates : Gould, Birds of Australia, vi. pl. 25.

Habits : Buller, Birds of New Zealand, p. 205.

Eggs : Harting, Proc. Zool. Soc. 1874, pl. lx. fig. 10.

The Black Stilt in adult summer plumage is *black all over,* more or less glossed with green on the upper parts. In winter plumage it is difficult to distinguish from *H. leucocephalus,* but in the Black Stilt the sides as well as the back of the neck are black, and the white collar and central tail-feathers are marked with black. The latter character is still more marked in young in first plumage.

The Black Stilt is a resident in New Zealand, and is said to stray occasionally to Australia.

The similarity of the winter plumage to that of the Australian Stilt proves the close relationship of the two species. The Black Stilt doubtless emigrated either from Chili or from Australia to New Zealand, and acquired in the latter country a special nuptial dress, the result, in all probability, of sexual selection.

HIMANTOPUS MELANOPTERUS.

Himantopus himantopus, Briss. Orn. v. p. 34 (1760).

Charadrius himantopus, Linn. Syst. Nat. i. p. 255 (1766).

Himantopus candidus, Bonn. Tabl. Encycl. i. p. 24 (1790).

Himantopus vulgaris, Bechst. Orn. Taschenb. ii. p. 325 (1803).

Cursorius himantopus (Briss.), Turton, Brit. Faun. p. 62 (1807).

Himantopus rufipes, Bechst. Naturg. Deutschl. iii. p. 446 (1809).

Himantopus atropterus, Meyer, Taschenb. ii. p. 315 (1810).

Himantopus melanopterus, Meyer, Ann. Wetter. Gesellsch. iii. p. 177 (1814); et auctorum plurimorum.

Himantopus albicollis, Vieill. N. Dict. d'Hist. Nat. x. p. 41 (1817).

Hypsibates himantopus (Briss.), Nitzsch, Ersch u. Grub. Encycl. xvi. p. 150 (1827).

Himantopus plinii, Flem. Brit. An. p. 112 (1828).

Himantopus asiaticus, Less. Rev. Zool. 1839, p. 44.

Himantopus intermedius, Blyth, Cat. B. Mus. As. Soc. p. 265 (1849).

Himantopus autumnalis (Hasselquist), apud Gray, Holdsworth, Legge, Heuglin, Walden, Gurney, &c.

Plates: Dresser, Birds of Europe, vii. pls. 535, 536.

Habits: Seebohm, British Birds, iii. p. 79.

Eggs: Seebohm, British Birds, pl. 24. figs. 4, 6.

The Common Stilt, when in fully adult male plumage, may be recognized by its *pure white head and neck*. Less mature birds have *black on the back of the neck, extending over the crown*, but *not reaching the mantle*. Young in first plumage scarcely differ from those of the North-American Stilt.

The Common Stilt is most abundant during the breeding-season in India and Ceylon, where its numbers are increased during winter. Further east it is found during the cold season in Burma; and stragglers have occurred in Cochin China, Timor, the Philippine Islands, and North China. West of India it is a regular summer visitor to Afghanistan, Turkestan, North Persia, Palestine, Asia Minor, to the saltlakes of the Kalmuk and Kirghis steppes, the lagoons on the shores of the Black Sea, the delta of the Rhone, and the marismas of Southern Spain and Portugal. It is an accidental straggler on migration to the rest of Europe as far north as the Baltic. It is a resident in Northern Africa, where its numbers are largely increased during winter, and it has been found in various localities throughout that continent; but no reliable evidence of its breeding in South Africa has been obtained. It has been found both in the Canary Islands and Madagascar.

The five species last mentioned represent the true Stilts. They are so closely related to each other that the precise order of their emigration is not very easy to determine, but we may begin by assuming that they left the Polar basin along the Atlantic shores of America; thence they seem to have crossed the tropics to the Chilian subregion of South America, where the second species was isolated and differentiated. A second detachment appears to have crossed the Atlantic to the Canary Islands and Spain, whence they spread eastwards up the Mediterranean to the Oriental Region. Meanwhile the restricted area of the Chilian subregion seems to have compelled some of the white-crowned Stilts to emigrate a second time. They seem to have crossed the Pacific to New Zealand and Australia, where those inhabiting the former locality developed a special breeding-plumage.

The lessons to be learnt from a study of the genus *Himantopus* appear to be numerous and important.

1st. The Zoological Regions of Sclater and Wallace, however important they may be as regards Passerine birds, throw little or no light on the geographical distribution of the Stilts and Avocets.

2nd. The key to their distribution is to be found in the various coast-lines leading from the Polar basin.

3rd. The unnecessary splitting of genera makes it very difficult for the student to understand the geographical distribution of birds.

4th. The exaggerated importance too often attached to so-called structural characters makes it still more difficult for the student to perceive the true relationship of birds.

5th. The differentiation of species in consequence of isolation, and the production of subspecific forms in consequence of semi-isolation, prove the great importance of interbreeding in preventing the indefinite multiplication of species.

XXIX.—*On some new Paradise-birds.*

By O. Finsch and A. B. Meyer*.

(Plate VII.)

Amongst the collectors who at first founded and afterwards materially increased our knowledge of the zoology of South-eastern New Guinea, the principal credit is due to our fellow-countryman, Karl Hunstein, of Friedberg, in Hesse. A first-rate shot, collector, and observer, it was he who, after the failure of the gold-diggers' expedition (in the ranks of which he first visited New Guinea, seven years ago), in company with the well-known collector, Andrew Goldie, made several excursions into the same district of New Guinea and eastwards to Milne Bay and the d'Entrecasteaux Islands. In all these expeditions, which (although considerable collections of natural-history and ethnographical objects were made) had the main object of gold-prospecting, Hunstein, although his name has not hitherto been brought prominently forward, was the real collector†, and to him our thanks are due for the discovery of most of the new birds transmitted by Goldie to Australia and England.

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* [Translated, by permission of the authors, from their article in the 'Zeitschrift für die gesammte Ornithologie,' 1885, Heft iv., entitled "Vögel von Neu-Guinea, zumeist aus den Alpenregion am Südostabhange des Owen-Stanley Gebirges (Hufeisengebirge, 7000–8000 f. hoch), gesammelt von Karl Hunstein," part i.]

† See Sharpe, Ann. Nat. Hist. (5) vi. p. 231 (1880); id. Journ. Linn. Soc., Zool. xvi. p. 423 (1883); Ramsay, Proc. Linn. Soc. N. S. W. viii. p. 15 (1883) et x. p. 242 (1885). *Phonygama hunsteini*, Sharpe (op. cit. p. 442), and *Donacicola hunsteini*, Finsch (Ibis, 1886, p. 1, pl. i.), are both named after Hunstein.